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Cisco Unified Wireless Networking v7.2 (CUWN)

Prerequisites

The knowledge and skills that a learner must have before attending this course are as follows:

- Cisco CCNA® or equivalent work experience
- Familiarity with Windows and Windows networking
- Prior attendance at IUWNE (recommended)

Course Objectives

Upon completing this course, the learner will be able to meet these overall objectives:

- Identify how the Cisco Unified Wireless Network solution meets the challenges of successful WLAN deployments
- Select and properly install the Cisco Unified Wireless Network hardware appropriate to site and use requirements
- Administer the WLAN, 802.11 security policies, and QoS appropriately to protect and optimize performance on the wireless network
- Configure and implement the key Cisco Unified Wireless Network security features to mitigate WLAN security threats
- Utilize a recommended troubleshooting methodology and the various tools available to gather and assess system data to isolate equipment failures and security threats

Course Outline:

1: Cisco WLAN Solutions

Identify how the Cisco Unified Wireless Network solution meets the challenges of successful wireless LAN (WLAN) deployments.

Characterizing Cisco Enterprise WLANs
Enterprise WLAN Solutions
Unique Characteristics of Cisco WLAN Solutions
Cisco Compatible Extensions Program
Cisco Unified Wireless Network Solutions
Cisco Unified Wireless Network Portfolio
Successful Wireless Deployments and Predeployment Planning
Cisco WLAN Professional Services

Identifying Hardware Models
Cisco WLAN Controllers
Cisco Access Points
Cisco Wireless Network Management Options
Cisco 3300 Series MSE

Describing WLC Terms and Protocols
Overview of Ports and Interfaces
VLANs in Wireless Networks
Distribution System Port

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802.3x Flow Control
Access Point Communication Protocols
Network Management Protocols
More About the IEEE 802.11n Protocol

2: Cisco Unified Wireless Network Installation and Configuration

Select and properly install the Cisco Unified Wireless Network hardware appropriate to site and use requirements.

Installing Hardware Components
Standalone Cisco WLCs
Integrated Cisco WLCs
Access Points

Configuring the Cisco WLC Setup
Initial Setup
CLI Configuration Wizard
Web-Based Setup
Configuring Cisco WLC Settings
Connect to the Cisco WLC Web Interface
Cisco WLC Settings

Configuring LAG
LAG Concept
Guidelines
Cisco WLC Configuration

Configuring IPv6
IPv6 Support in the Cisco WLC
IPv6 Support in a Cisco Unified Wireless Network Environment
Cisco WLC Configuration

Describing AP Operational Modes
AP Operational Modes
AP Local Mode
AP Monitor Mode
AP Rogue Detector Mode
AP Sniffer Mode
AP Bridge Mode
AP SE-Connect Mode
AP FlexConnect Mode
OfficeExtend Access Points
Setting AP Authentication

Configuring 802.11 Protocols, Performance Optimization, and Auto RF
802.11 Introduction
802.11 Global Parameters
Protection Mechanism
Split MAC Architecture
Radio Resource Management

Implementing Cisco CleanAir
Introduction to Cisco CleanAir

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Cisco CleanAir Concepts
Cisco CleanAir Modes of Operation
Air Quality Configuration and Reporting
Cisco CleanAir-Enabled RRM

3: Cisco Unified Wireless Network Administration

Administer the WLAN, 802.11 security policies, and quality of service (QoS) appropriately to protect and optimize performance on the wireless network.

Associating an AP to a WLC
AP Discovery and Join Process
AP Join Order
AP Failover Process
Controller High-Availability Design

Configuring Mobility Groups and Roaming
Wireless Roaming Concepts
Mobility Groups
Mobility Messaging
Auto-Anchor Mobility
Static IP Mobility
Fast Roaming for FlexConnect

Administering Individual WLANs and AP Groups
Wireless LAN
Passive Client Support
AP Groups
RF Profiles
FlexConnect Groups

Configuring QoS
QoS Overview
802.11e/WMM
QoS Packet Marking Mappings
QoS Process
Implementing QoS
QoS Roles
Parameters Affecting Voice and Video Quality
VoIP Phone Support Features
Enhanced EDCA Support
Configuring Video Parameters

Performing General Administration
Login Banner
Controller > Network Routes > New
Cisco Discovery Protocol
Controller > Internal DHCP Server > New or Edit
Multicast
Multicast Video Delivery Challenges
Evolving Need for Video over WLAN
Cisco VideoStream Technology

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Service Provider Enhancements
StadiumVision Mobile
802.11u
Mobility Services Advertisement Protocol

4: Cisco Unified Wireless Network Security

Configure and implement the primary Cisco Unified Wireless Network security features to mitigate WLAN security threats.

Describing 802.11 Weak Security Policy
Open Authentication
Shared Key Authentication: Static WEP
Web Authentication
Configuring Security Parameters
Configuring the Local Database
MAC Filtering
Access Control Lists
FlexConnect ACLs
Peer-to-Peer Blocking Mode
Configuring RADIUS Authentication
Local EAP
LDAP Configuration
Cisco TrustSec for Wireless
Management Frame Protection
Wi-Fi Direct

Configuring a Cisco Unified Wireless Network to Support 802.1X Authentication
Wireless Security for Clients
Cisco Enhanced 802.11 WEP Security
Wi-Fi Protected Access
802.11i/WPA2
802.11i Authentication and Key Management
Cisco Centralized Key Management
802.11i and WPA/WPA2 Differences
PKI Principles
Security Policy Logic
Configuring WPA and WPA2 Enterprise Security

5: Cisco Unified Wireless Network Maintenance and Troubleshooting

Utilize a recommended troubleshooting methodology and the various tools available to gather and assess system data to isolate equipment failures and security threats.

Troubleshooting Cisco Unified Wireless Network
Troubleshooting Basics
Analysis Tools Available in a Cisco Unified Wireless Network
debug and show Commands
Association Troubleshooting

Gathering VLAN Traffic and Other Data
AP Sniffer Mode
Message Logging
WLC Statistics

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Monitor > Wireless > Clients > Detail

Configuring Policies and Management
Aggressive Load Balancing
Wireless Protection Policies
Rogue Policies
Monitoring Rogue APs
Intrusion Detection Management
Client Exclusion Policies
Monitor > Clients > Remove
Monitor > Clients > LinkTest

Loading Device Code and Managing Configuration Data
Controller > Inventory
Access Point Hardware and Software Information
Upgrading WLC Code
Access Point Pre-Image Download
FlexConnect AP Upgrade
Manual Upgrade of Controller Code
Retrieving Files from the WLC
Wireless > All APs > Detail
Commands > Reset to Factory Default
Commands > Reboot System > Save and Reboot or Reboot Without Save

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